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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,806	02/12/2004	Vinayaka D. Pandit	JP920030227US1	5371

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06/19/2007

EXAMINER
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CHAWAN, SHEELA C

ART UNIT	PAPER NUMBER
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2624

MAIL DATE	DELIVERY MODE
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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/777,806

Applicant(s)

PANDIT ET AL.

Examiner

Sheela C. Chawan

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/12/04</u> . | 6) <input type="checkbox"/> Other: _____  |

***DETAILED ACTION***

***Preliminary Amendment***

1. Preliminary amendment filed on 2/12/04 has been entered.

***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on 2/12/04, the examiner is considering the information disclosure statement.

***Drawings***

3. The Examiner has approved drawings filed on 2/12/04.

***Claim Objections***

4. Claims 1, 8 and 15 are objected to because of the following informalities:

Claim 1 is objected to because of the following informalities:

In claim 1, line 5, change “,” to -- ; -- .

In claim 1, line 6, change “,” to -- ; -- .

In claim 1, line 8, change “,” to -- ; -- .

Similarly all the claims need to be corrected.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1- 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Russo et al., (US. 6,330,345 B1).

As to claim 1, Russo discloses a method of matching a query fingerprint to a plurality of file fingerprints (note, file fingerprint corresponds to diagnostic data which is already stored in the memory or storage or look up table to correct the captured images, fig 3, 350), the method comprising the steps of:

determining a plurality of partial features (note, partial features are ridge, fig 1, 180 and valley fig 1, 190, which corresponds to minutiae, column 4, lines 19-51) of each of the file fingerprints (note, file fingerprint corresponds to diagnostic data which is already stored in the memory or storage or look up table to correct the captured images, fig 3, 350, detecting the condition of the finger by examining specific regions of the captured data rather than the total image. The specific region can be row or column of the data from the sensor device that are centrally located on the image, column 6, lines 17-51, column 7, lines 21-34, column 3, lines 1-17),

for each partial feature, deriving a list of all file fingerprints which have said partial feature as one of their partial features (note, partial features are ridge, fig 1, 180 and valley fig 1, 190, which corresponds to minutiae list, column 4, lines 19-51),

determining a plurality of query partial features of the query fingerprint (note, file fingerprint corresponds to diagnostic data which is already stored in the memory or storage or look up table to correct the captured images, fig 3, 350, detecting the condition of the finger by examining specific regions of the captured data rather than the total image. The specific region can be row or column of the data from the sensor

device that are centrally located on the image, column 6, lines 17-51, column 7, lines 21-34),

deriving a ranked list of the file fingerprints based on identifying the individual query partial features in the partial features of the respective file fingerprints (note ranking list corresponds to scores by examining histogram of the captured data. Specifically , the histograms of gray level data are created for each of the specific regions are combined into a single histogram that represents the image for a given set of settings, is analyzed by calculating a scores for each histogram, column 7, lines 44-67, column 8, lines 1-67), and

performing a one-to-one matching of the query fingerprint with selected ones of the ranked list of the file fingerprints (note ranking list corresponds to scores by examining histogram of the captured data. Specifically , the histograms of gray level data are created for each of the specific regions are combined into a single histogram that represents the image for a given set of settings, is analyzed by calculating a scores for each histogram, column 7, lines 44- 67, column 8, lines 1-67, column 9, lines 1-67, column 10, lines 1-13),

As to claims 2, 9, and 16 Russo discloses the method as claimed in claim 1, wherein the method comprises associating a discriminate score with each partial feature based on the number of file fingerprints which have said partial feature as one of their partial features, and the step of deriving the ranked list of the file fingerprints comprises updating scores for matches between the query fingerprint and individual ones of the file fingerprints based on the discriminate scores of one or more partial features identified in

the individual file fingerprints as one of the query partial features (column 4, lines 19-51, column 6, lines 17-51, column 7, lines 21-34, 44- 67, column 8, lines 1-67, column 9, lines 1-67, column 10, lines 1-13).

As to claims 3, 10 and 17 Russo discloses the method as claimed in claim 1, wherein the partial features comprise minutiae feature sets (note, partial features are ridge, fig 1, 180 and valley fig 1, 190, which corresponds to minutiae, column 4, lines 19-51).

As to claims 4, 11 and 18 Russo discloses the method as claimed in claim 3, wherein the minutiae feature sets each comprise a set of minutiae features for which a geometric separation between any two minutiae in it falls within a predetermined range (fig 5A, 5B and 5C corresponds to minutiae geometric).

As to claims 5, 12 and 19 Russo discloses the method as claimed in claim 4, wherein a number of minutiae features in each minutiae feature set falls within a predetermined range (column 7, lines 21-34, 44- 67, column 8, lines 1-67, column 9, lines 1-67, column 10, lines 1-13).

As to claims 6, 13 and 20 Russo discloses the method as claimed in claim 2, wherein the discriminate score is calculated in a manner such that it has higher values for partial features that occur in a smaller number of file fingerprints, (column 7, lines 21-34, 44- 67, column 8, lines 1-67, column 9, lines 1-67, column 10, lines 1-13).

As to claims 7, 14 and 21 Russo discloses the method as claimed in claim 6, wherein the discriminate scores are further based on a total number of partial features

in all of the file fingerprints, (column 7, lines 21-34, 44- 67, column 8, lines 1-67, column 9, lines 1-67, column 10, lines 1-13).

As to claim 22 Russo discloses a method of maintaining a database of file fingerprints, the method comprising the steps of:

determining a plurality of partial features of each of the file fingerprints, and for each partial feature, deriving a list of all file fingerprints which have said partial feature as one of their partial features (column 7, lines 21-34, 44- 67, column 8, lines 1-67, column 9, lines 1-67, column 10, lines 1-13).

As to claim 23, Russo discloses the method as claimed in claim 22, wherein the method comprises associating a discriminate score with each partial feature based on the number of file fingerprints which have said partial feature as one of their partial features (note ranking list corresponds to scores by examining histogram of the captured data. Specifically, the histograms of gray level data are created for each of the specific regions are combined into a single histogram that represents the image for a given set of settings, is analyzed by calculating a scores for each histogram, column 7, lines 44- 67, column 8, lines 1-67, column 9, lines 1-67, column 10, lines 1-13).

As to claim 8 see the rejection of claim 1 above.

As to claim 15, see the rejection of claim 1 above.

***Other prior art cited***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Mimura et al., (US. 7162058) discloses authentication system by fingerprint.

Huang (US. 7050609) discloses biometric data acceptance method.

Io et al., (US. 6876757) discloses fingerprint recognition system.

Kramer et al., (US. 6580816) discloses scanning capacitive semiconductor fingerprint detector.

Mainguet (US. 6459804) discloses fingerprint-reading system.

Bolle et al., (US. 6005963) discloses system and method for determining if a fingerprint image contains an image portion representing a partial fingerprint impression.

Asai et al., (US. 4872203) discloses image input device for processing a fingerprint prior to identification.



**Contact Information**

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela C Chawan whose telephone number is 571-272-7446. The examiner can normally be reached on Monday - Thursday 7.30 - 6.00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen Lillis can be reached on 571-272-6928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sheela Chawan  
Patent Examiner  
Group Art Unit 2624  
June 4, 2007

*Sheela Chawan*  
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PRIMARY EXAMINER